AMENDMENTS TO THE CLAIMS

Claims 1-49 (Cancelled)

50. (Currently amended) A method ~~for testing a television~~, comprising:

selecting a data pattern to be created from a set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions; and

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data patterns that is stored based on the pre-programming of the selected data pattern, retrieving the portion.

51. (Previously presented) The method of Claim 50, further comprising:

determining and storing at least one checksum for each of the at least one pre-programmed data pattern;

generating at least one BIST checksum from the created data pattern; and

comparing the at least one BIST checksum with the at least one stored checksum for the created data pattern.

52. (Previously Presented) The method of Claim 50, wherein the algorithmic pattern generation is accomplished, in part, by a state machine.

53. (Previously Presented) The method of Claim 52, further comprising:

determining if a different data pattern is selected; and

if a different data pattern is selected:

asserting a pattern change signal; and

resetting a state machine responsive to the pattern change signal.

54. (Currently amended) The method of Claim 52, wherein creating the selected data pattern includes:

when the selected data pattern is selected, starting the state machine and initiating sample, packet, and look-up signals; and

creating the selected data pattern from at least one of a look-up table and the state machine by tracking a location in a data sequence of the selected data pattern and transitioning between states according to the pre-programming.

55. (Previously Presented) The method of Claim 54, wherein creating the selected data pattern data pattern further includes filtering an output of at least one of the state machine and the look-up table.

56. (Previously Presented) The method of Claim 54, wherein creating the selected data pattern further includes dithering an output of at least one of the state machine and the look-up table.

57. (Previously Presented) The method of Claim 52, wherein the algorithmic pattern generation is further accomplished by a plurality of tables.

58. (Previously Presented) The method of Claim 57, wherein selecting the data pattern is accomplished by providing a pattern select signal to a register, and wherein performing the pre-programmed algorithm includes:

employing the state machine to provide a plurality of clear and increment signals;

providing a table output signal from the plurality of tables based on the plurality of clear and increment signals and the pattern select signal.

59. (Previously Presented) The method of Claim 50, wherein selecting the data pattern is accomplished by providing a pattern select signal to a register.

60. (Currently amended) The method of Claim 59, further comprising decoding an output of the register ~~pattern select signal~~ to identify the selected data pattern and providing a plurality of signals based on the pattern select signal to a state machine, wherein the algorithmic pattern generation is accomplished, in part, by the state machine.

61. (Currently amended) The method of Claim 50, further comprising performing pre-programming ~~at least one data pattern~~ to provide the set of at least one pre-programmed data pattern.

62. (Currently amended) The method of Claim 61, wherein performing the pre-programming is accomplished such that the set of at least one pre-programmed data patterns includes sixteen component video patterns.

63. (Currently amended) The method of Claim 61, wherein performing the pre-programming ~~the at least one data pattern~~ is accomplished such that each pre-programmed data pattern in the set of at least one pre-programmed data patterns includes at least one of a stream of data and packets of data.

64. (Currently amended) The method of Claim 61, wherein performing the pre-programming ~~the at least one data pattern~~ is accomplished by:

generating a computer-readable algorithm that is configured to provide at least one portion of a plurality of portions of the selected data pattern through algorithmic pattern generation; and

storing at least one other portion of the plurality of portions in a look-up table of a plurality of look-up tables.

65. (Currently amended) The method of Claim 64, wherein performing the pre-programming is further accomplished by:

determining and storing at least one checksum for each data pattern of the at least one data pattern.

66. (Previously Presented) The method of Claim 64, wherein storing the at least one other portion of each of the plurality of portions is accomplished such that the other portion of each of the plurality of portions is a forty-bit data sample including a unique 10-bit data word.

67. (Previously Presented) The method of Claim 64, wherein generating the computer-readable algorithm includes:

configuring a state machine and at least one look-up table in the plurality of look-up tables to regenerate the data pattern.

68. (Previously Presented) The method of Claim 67, wherein configuring the at least one look-up table is accomplished such that each look-up table of the at least one look-up table is divided into five sample segments, wherein each of the five sample segments includes four 10-bit samples, and further includes a repeat value that indicates how many times the four 10-bit samples are to be repeated.

69. (Previously Presented) The method of Claim 67, wherein configuring the state machine and the at least one look-up table includes:

configuring the at least one look-up table to store a part of a repeating data sequence; and

configuring the at least one look-up table to store a value indicating a number of times that the part of the repeating data sequence is to be repeated.

70. (Previously Presented) The method of Claim 64, wherein generating the computer-readable algorithm includes:

configuring a memory component to include tables including a header table that includes data for algorithmic pattern generation of vertical blanking lines.

71. (Currently amended) The method of Claim 70, wherein configuring the memory component is further accomplished such that the tables further include ~~an~~ line index table with values indicating when to switch to and from the vertical blanking lines to active video lines.

72. (Previously Presented) The method of Claim 70, wherein configuring the memory component is further accomplished such that the tables further include a colour table, a PLL pathological table, and an equalizer pathological table for algorithmic pattern generation of active video lines.

73. (Previously Presented) The method of Claim 72, wherein configuring the memory component further includes configuring logic for the equalizer pathological table for selecting between two elements based on a line number and further based on which of the at least one data pattern is selected.

74. (Withdrawn) A method for testing a television, comprising:

generating a computer-readable algorithm that is configured to provide at least one portion of a plurality of portions of a data pattern through algorithmic pattern generation; and

storing at least one other portion of the plurality of portions in a look-up table.

75. (Withdrawn) The method of Claim 74, further comprising:

generating at least one other computer-readable algorithm that is configured to provide at least one other portion of a plurality of portions of another data pattern through algorithmic pattern generation such that the computer-readable algorithm and the other computer-readable algorithm comprise a plurality of computer-readable algorithms that are stored in a computer-readable medium, and such that the computer-readable medium is configured to regenerate a plurality of data patterns including the data pattern and the other data pattern;

storing at least one other portion of the other data pattern in the look-up table;

selecting a data pattern from the plurality of data patterns;

creating the selected data pattern based on at least one of the computer-readable algorithms and further based on the other portion of the plurality of portions of the selected data pattern.

76. (Withdrawn) The method of Claim 74, wherein storing the at least one other portion is accomplished such that the other portion of each of the plurality of portions is a forty-bit data sample including a unique 10-bit data word.

77. (Withdrawn) The method of Claim 74, wherein generating the computer-readable algorithm includes:

configuring a state machine and at least one look-up table in the plurality of look-up tables to regenerate the data pattern.

78. (Withdrawn) The method of Claim 77, wherein configuring the state machine and the at least one look-up table includes:

configuring the at least one look-up table to store a part of a repeating data sequence; and

configuring the at least one look-up table to store a value indicating a number of times that the part of the repeating data sequence is to be repeated.

79. (Withdrawn) The method of Claim 74, wherein generating the computer-readable algorithm includes:

configuring a memory component to include a plurality of tables including a header table that includes data for algorithmic pattern generation of vertical blanking lines.

80. (Withdrawn) The method of Claim 79, wherein configuring the memory component is further accomplished such that the plurality of tables further includes an line index table with values indicating when to switch to and from the vertical blanking lines to active video lines.

81. (Withdrawn) The method of Claim 79, wherein configuring the memory component is further accomplished such that the plurality of tables further includes a colour table, a PLL pathological table, and an equalizer pathological table for algorithmic pattern generation of active video lines.

82. (Withdrawn) The method of Claim 81, wherein configuring the memory component further includes configuring logic for the equalizer pathological table for selecting between two elements based on a line number and further based on which of the plurality of data patterns is selected.

83. (Withdrawn) A test circuit for a television, comprising:

a pattern selection register that is arranged to store and provide a pattern select value indicating a selected data pattern of a set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern includes a plurality of portions;

a look-up table component that stores a portion in the plurality of portions of each of the pre-programmed data patterns in the set of at least one pre-programmed data pattern; and

a state machine that is configured to enable the selected data pattern to be generated based on the pattern select value, wherein state machine is configured to enable the selected data pattern to be generated by:

controlling a retrieval of the portion of the selected data pattern from the look-up table component; and

based on the pre-programming, controlling a sequencing for algorithmic pattern generation of another portion of the selected data pattern.

84. (Withdrawn) The test circuit of Claim 83, wherein the state machine is configured to control both the retrieval of the portion and the other portion by providing a plurality of clear and increment signals.

85. (Withdrawn) The test circuit of Claim 84, wherein the look-up table component is configured to generate a table output signal based on the clear and increments signals, and further based on the pattern select value.

86. (Withdrawn) The test circuit of Claim 85, further comprising an output register that is configured to generate the selected data pattern from the data output signal.

87. (Withdrawn) The test circuit of Claim 85, wherein the look-up table component includes a plurality of look-up tables including a header table.

88. (Withdrawn) The test circuit of Claim 87, wherein at least one of the plurality of look-up tables stores part of a repeating data sequence, and further stores a value indicating a number of times that the part of the repeating data sequence is to be repeated.

89. (Withdrawn) The test circuit of Claim 87, wherein the header table includes data for algorithmic pattern generation of vertical blanking lines.

90. (Withdrawn) The test circuit of Claim 87, further comprising a line index table component that stores values indicating when to the state machine is to control switching to and from the vertical blanking lines to active video lines.

91. (Withdrawn) The test circuit of Claim 87, wherein the plurality of look-up tables further include a colour table, a PLL pathological table, and an equalizer pathological table.

92. (Withdrawn) The test circuit of Claim 91, further comprising a plurality of logic gates for selecting between two elements for reading from an equalizer pathological table such that the selection between the two elements is based on a line number and further based on the pattern select value.

93. (Withdrawn) The test circuit of Claim 83, further comprising:

a built-in self test circuit that is arranged to perform actions, including:

during a configuration, determining and storing at least one checksum for each of the plurality of component video data patterns;

determining at least one checksum for the regenerated selected data pattern; and

comparing the at least one checksum for the regenerated selected data pattern with the at least one stored checksum for the selected data pattern; and

a BIST result output pin that is configured to provide a BIST result signal that indicates a result of the checksum comparison.

94. (Withdrawn) A test circuit for a television, comprising:

a look-up table component that is configurable to store a portion of each of a plurality of data patterns;

a state machine that is configurable to provide, if one of the plurality of data patterns is selected, a sequencing for algorithmic pattern generation of another portion of the selected data pattern;

an output register that is configured to provide a regenerated selected data pattern based, in part, on the sequencing; and

a built-in self test circuit that is configured to perform actions, including:

during a configuration, determining and storing at least one checksum for each of the plurality of data patterns;

determining at least one checksum for the regenerated selected data pattern; and

comparing the at least one checksum for the regenerated selected data pattern with the at least one stored checksum for the selected data pattern.

95. (Withdrawn) A test circuit for a television, comprising:

a pattern selection register that is arranged to store and provide a pattern selection value indicating a selected data pattern of a plurality of component video data patterns, wherein each component video data pattern in the plurality of component video data patterns includes a plurality of portions;

a pattern generation state machine that is arranged to control a sequencing of a regeneration of the selected data pattern by providing a plurality of clear and increment signals;

a memory component that is arranged to provide a table output value based on the plurality of clear and increment signals and the pattern selection value, wherein the memory component includes:

a line index table that stores values indicating a number of lines to transmit before switching to and from vertical blanking lines to active video lines;

a header table that stores:

a plurality of forty-bit data samples that each include a unique data word; and

a sequence of data that includes a portion of a repeating vertical blanking data sequence for the vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

a colour table;

a PLL pathological table; and

an equalizer pathological table;

a plurality of logic gates that are arranged to select one of two values associated with reading from the equalizer pathological table based on a line count value and the pattern selection value;

an output register that is arranged to regenerate the selected data pattern based, in part, on the table output value;

a built-in self test circuit that is arranged to perform actions, including:

during a configuration, determining and storing at least one checksum for each of the plurality of component video data patterns;

determining at least one checksum for the regenerated selected data pattern; and

comparing the at least one checksum for the regenerated selected data pattern with the at least one stored checksum for the selected data pattern; and

a BIST result output pin that is configured to provide a BIST result signal that indicates a result of the comparison.

96. (Withdrawn) The test circuit of Claim 95, further comprising a line counter, a sample counter, and a repeat counter, wherein the plurality of component video patterns includes at least sixteen component video patterns; each of the plurality of look-up tables is divided into five sample segments; and wherein each of the five sample segments includes four 10-bit samples, and further includes a repeat value that indicates to the state machine how many times the four 10-bit samples are to be repeated.

97. (Withdrawn) A method for testing a television, comprising:

configuring a state machine with, for each of a plurality of component video data patterns, a sequencing for regenerating each of the component video data patterns;

configuring a header table to store:

a plurality of forty-bit data samples that each include a unique data word; and

a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

configuring a line index table to store values indicating a number of lines to transmit before switching to and from the vertical blanking lines to active video lines;

configuring a colour table, a PLL pathological table, and an equalizer pathological table for algorithmic pattern generation of portions of each of the plurality of component video data patterns for the active video lines;

determining and storing at least one checksum for each of the plurality of component video data patterns;

selecting one of the plurality of component video patterns;

providing a plurality of clear and increment signals based on the sequencing for regenerating the selected component video pattern;

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit; and

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin.

98. (Withdrawn) The method of Claim 97, wherein the plurality of component video patterns includes at least sixteen component video-patterns; regeneration of the selected data pattern is provided based on a relatively small number of data words including the plurality of forty bit data samples and the sequence of data; configuring the at least one look-up table is accomplished such that each look-up table of the at least one look-up table is divided into five sample segments; and wherein each of the five sample segments includes four 10-bit samples, and further includes a repeat value that indicates how many times the four 10-bit samples are to be repeated.

99. (Currently amended) A method, comprising:

performing pre-programming to provide a set of at least one pre-programmed data pattern;

selecting a data pattern to be created from the set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions; and

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data pattern that is stored based on the pre-programming of the selected data pattern, retrieving the portion~~The method of Claim 61~~, wherein

performing the pre-programming ~~the at least one data pattern~~ is accomplished according to the method of Claim 82.

100. (Currently amended) The method of Claim 61, further comprising:

determining and storing at least one checksum for each data pattern of the set of at least one data pattern, wherein creating the selected test pattern includes regenerating the selected test pattern such that the created data pattern is a regenerated selected test pattern;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit; and

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin,

wherein the set of at least one data pattern includes the plurality of component video patterns;

pre-programming the at least one data pattern includes:

configuring a state machine with, for each of the plurality of component video data patterns, a sequencing for regenerating each of the component video data patterns;

configuring a header table to store:

a plurality of forty-bit data samples that each include a unique data word; and

a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

configuring a line index table to store values indicating a number of lines to transmit before switching to and from the vertical blanking lines to active video lines; and

configuring a colour table, a PLL pathological table, and an equalizer pathological table for algorithmic pattern generation of portions of each of the plurality of component video data patterns for the active video lines; and

wherein creating the selected data pattern includes:

providing a plurality of clear and increment signals based on the sequencing for regenerating the selected component video pattern; and

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals.

101. (Currently amended) A method, comprising:

selecting a data pattern to be created from a set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions; and

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data pattern that is stored based on the pre-programming of the selected data pattern, retrieving the portion~~The method of Claim 50~~, wherein

the method is accomplished by employing the test circuit of Claim 92.

102. (Currently amended) A method, comprising:

selecting a data pattern to be created from a set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions; and

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data pattern that is stored based on the pre-programming of the selected data pattern, retrieving the portion~~The method of Claim 50~~, wherein

the method is accomplished by employing the test circuit of Claim 94.

103. (Currently amended) A method, comprising:

selecting a data pattern to be created from a set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions; and

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data pattern that is stored based on the pre-programming of the selected data pattern, retrieving the portion~~The method of Claim 50~~, wherein

the method is accomplished by employing the test circuit of Claim 96.

104. (Currently amended) The method of Claim 50, further comprising:

determining and storing at least one checksum for each data pattern in the set of at least one pre-programmed data pattern, wherein each data pattern in the set of at least one data pattern is a component video pattern, the set of at least one data pattern includes a plurality of component video patterns including at least sixteen data patterns, and wherein creating the selected test pattern includes regenerating the selected test pattern;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit;

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin;

determining if a different data pattern is selected; and

if a different data pattern is selected:

asserting a pattern change signal; and

resetting a state machine responsive to the pattern change signal;

decoding an output of a pattern select value of a pattern select signal to identify the selected data pattern and providing a plurality of signals based on the pattern select signal to the state machine; and

performing pre-programming ~~at least one data pattern~~ to provide the set of at least one pre-programmed data pattern, wherein the pre-programmed algorithm is a computer-readable algorithm, and wherein creating the selected data pattern includes, based upon the set of at least one pre-programmed algorithm:

when the data pattern is selected, starting the state machine and initiating sample, packet, and look-up signals; and

creating the selected data pattern from at least a look-up table component and a state machine by performing actions, including:

tracking a location in a data sequence of the selected test pattern and transitioning between states according to the pre-programming by providing a plurality of clear and increment signals from the state machine; and

employing the look-up table component to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, wherein the look-up table component includes a plurality of look-up tables, and wherein plurality of look-up tables includes a header table, a colour table, a PLL pathological table, an equalizer pathological table, and a line index table;

~~filtering an output of at least one of the state machine and the plurality of look-up tables; and~~

~~dithering an output of at least one of the state machine and the plurality of look-up tables.~~

105. (Currently amended) A method, comprising:

performing pre-programming to provide a set of at least one pre-programmed data pattern;

selecting a data pattern to be created from the set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions;

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data pattern that is stored based on the pre-programming of the selected data pattern, retrieving the portion;

determining and storing at least one checksum for each data pattern in the set of at least one pre-programmed data pattern, wherein each data pattern in the set of at least one data pattern is a component video pattern, the set of at least one data pattern includes a plurality of component video patterns including at least sixteen data patterns, and wherein creating the selected test pattern includes regenerating the selected test pattern;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit;

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin;

determining if a different data pattern is selected; and

if a different data pattern is selected:

asserting a pattern change signal; and

resetting a state machine responsive to the pattern change signal;

decoding an output of a pattern select value of a pattern select signal to identify the selected data pattern and providing a plurality of signals based on the pattern select signal to the state machine; and

wherein the pre-programmed algorithm is a computer-readable algorithm, and wherein creating the selected data pattern includes, based upon the set of at least one pre-programmed algorithm:

when the data pattern is selected, starting the state machine and initiating sample, packet, and look-up signals; and

creating the selected data pattern from at least a look-up table component and a state machine by performing actions, including:

tracking a location in a data sequence of the selected test pattern and transitioning between states according to the pre-programming by providing a plurality of clear and increment signals from the state machine;

employing the look-up table component to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, wherein the look-up table component includes a plurality of look-up tables, and wherein plurality of look-up tables includes a header table, a colour table, a PLL pathological table, an equalizer pathological table, and a line index table;

filtering an output of at least one of the state machine and the plurality of look-up tables; and

dithering an output of at least one of the state machine and the plurality of look-up tables~~The method of Claim 104~~, wherein

performing the pre-programming ~~the at least one data pattern~~ is accomplished according to the method of Claim 74.

106. (Currently amended) A method, comprising:

performing pre-programming to provide a set of at least one pre-programmed data pattern;

selecting a data pattern to be created from the set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions;

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data pattern that is stored based on the pre-programming of the selected data pattern, retrieving the portion;

determining and storing at least one checksum for each data pattern in the set of at least one pre-programmed data pattern, wherein each data pattern in the set of at least one data pattern is a component video pattern, the set of at least one data pattern includes a plurality of component video patterns including at least sixteen data patterns, and wherein creating the selected test pattern includes regenerating the selected test pattern;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit;

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin;

determining if a different data pattern is selected; and

if a different data pattern is selected:

asserting a pattern change signal; and

resetting a state machine responsive to the pattern change signal;

decoding an output of a pattern select value of a pattern select signal to identify the selected data pattern and providing a plurality of signals based on the pattern select signal to the state machine; and

wherein the pre-programmed algorithm is a computer-readable algorithm, and wherein creating the selected data pattern includes, based upon the set of at least one pre-programmed algorithm:

when the data pattern is selected, starting the state machine and initiating sample, packet, and look-up signals; and

creating the selected data pattern from at least a look-up table component and a state machine by performing actions, including:

tracking a location in a data sequence of the selected test pattern and transitioning between states according to the pre-programming by providing a plurality of clear and increment signals from the state machine;

employing the look-up table component to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, wherein the look-up table component includes a plurality of look-up tables, and wherein plurality of look-up tables includes a header table, a colour table, a PLL pathological table, an equalizer pathological table, and a line index table;

filtering an output of at least one of the state machine and the plurality of look-up tables; and

dithering an output of at least one of the state machine and the plurality of look-up tables~~The method of Claim 104~~, wherein

performing the pre-programming ~~the at least one data pattern~~ is accomplished according to the method of Claim 82.

107. (Currently amended) The method of Claim 104, wherein

performing the pre-programming ~~the at least one data pattern~~ includes:

generating the computer-readable algorithm, wherein generating the computer-readable algorithm includes: configuring the state machine, and further includes configuring a memory component to include the plurality of look-up tables to regenerate the data pattern; and

storing at least one other portion of the plurality of portions in the plurality of look-up tables;

storing the at least one other portion of each of the plurality of portions is accomplished such that the other portion of each of the plurality of portions is a forty-bit data sample including a unique 10-bit data word;

configuring the memory component includes:

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, including configuring the at least one look-up table to store a part of a repeating data sequence, configuring the at least one look-up table to store a value indicating a number of times that the part of the repeating data sequence is to be repeated;

configuring logic for the equalizer pathological table for selecting between two elements based on a line number and further based on which of the at least one data pattern is selected; and

wherein configuring the memory component is accomplished such that:

the header table includes a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

the line index table includes values indicating when to switch to and from the vertical blanking lines to active video lines;

the equalizer pathological table is configured for algorithmic pattern generation of active video lines;

each look-up table of the plurality of look-up tables is divided into five sample segments; and

such that each of the five sample segments includes four 10-bit samples, and further includes a repeat value that indicates how many times the four 10-bit samples are to be repeated.

108. (Currently amended) A method, comprising:

performing pre-programming to provide a set of at least one pre-programmed data pattern;

selecting a data pattern to be created from the set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions;

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data pattern that is stored based on the pre-programming of the selected data pattern, retrieving the portion;

determining and storing at least one checksum for each data pattern in the set of at least one pre-programmed data pattern, wherein each data pattern in the set of at least one data pattern is a component video pattern, the set of at least one data pattern includes a plurality of component video patterns including at least sixteen data patterns, and wherein creating the selected test pattern includes regenerating the selected test pattern;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit;

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin;

determining if a different data pattern is selected; and

if a different data pattern is selected:

asserting a pattern change signal; and

resetting a state machine responsive to the pattern change signal;

decoding an output of a pattern select value of a pattern select signal to identify the selected data pattern and providing a plurality of signals based on the pattern select signal to the state machine; and

wherein the pre-programmed algorithm is a computer-readable algorithm, and wherein creating the selected data pattern includes, based upon the set of at least one pre-programmed algorithm:

when the data pattern is selected, starting the state machine and initiating sample, packet, and look-up signals; and

creating the selected data pattern from at least a look-up table component and a state machine by performing actions, including:

tracking a location in a data sequence of the selected test pattern and transitioning between states according to the pre-programming by providing a plurality of clear and increment signals from the state machine;

employing the look-up table component to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, wherein the look-up table component includes a plurality of look-up tables, and wherein plurality of look-up tables includes a header table, a colour table, a PLL pathological table, an equalizer pathological table, and a line index table;

filtering an output of at least one of the state machine and the plurality of look-up tables; and

dithering an output of at least one of the state machine and the plurality of look-up tables, wherein

performing the pre-programming includes:

generating the computer-readable algorithm, wherein generating the computer-readable algorithm includes: configuring the state machine, and further includes configuring a memory component to include the plurality of look-up tables to regenerate the data pattern; and

storing at least one other portion of the plurality of portions in the plurality of look-up tables;

storing the at least one other portion of each of the plurality of portions is accomplished such that the other portion of each of the plurality of portions is a forty-bit data sample including a unique 10-bit data word;

configuring the memory component includes:

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, including configuring the at least one look-up table to store a part of a repeating data sequence, configuring the at least one look-up table to store a value indicating a number of times that the part of the repeating data sequence is to be repeated;

configuring logic for the equalizer pathological table for selecting between two elements based on a line number and further based on which of the at least one data pattern is selected;

configuring the memory component is accomplished such that:

the header table includes a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

the line index table includes values indicating when to switch to and from the vertical blanking lines to active video lines;

the equalizer pathological table is configured for algorithmic pattern generation of active video lines;

each look-up table of the plurality of look-up tables is divided into five sample segments; and

such that each of the five sample segments includes four 10-bit samples, and further includes a repeat value that indicates how many times the four 10-bit samples are to be repeated; and ~~The method of Claim 107,~~ wherein

the method is accomplished by employing the test circuit of Claim 92.

109. (Currently amended) A method, comprising:

performing pre-programming to provide a set of at least one pre-programmed data pattern;

selecting a data pattern to be created from the set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions;

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data pattern that is stored based on the pre-programming of the selected data pattern, retrieving the portion;

determining and storing at least one checksum for each data pattern in the set of at least one pre-programmed data pattern, wherein each data pattern in the set of at least one data pattern is a component video pattern, the set of at least one data pattern includes a plurality of component video patterns including at least sixteen data patterns, and wherein creating the selected test pattern includes regenerating the selected test pattern;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit;

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin;

determining if a different data pattern is selected; and

if a different data pattern is selected:

asserting a pattern change signal; and

resetting a state machine responsive to the pattern change signal;

decoding an output of a pattern select value of a pattern select signal to identify the selected data pattern and providing a plurality of signals based on the pattern select signal to the state machine; and

wherein the pre-programmed algorithm is a computer-readable algorithm, and wherein creating the selected data pattern includes, based upon the set of at least one pre-programmed algorithm:

when the data pattern is selected, starting the state machine and initiating sample, packet, and look-up signals; and

creating the selected data pattern from at least a look-up table component and a state machine by performing actions, including:

tracking a location in a data sequence of the selected test pattern and transitioning between states according to the pre-programming by providing a plurality of clear and increment signals from the state machine;

employing the look-up table component to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, wherein the look-up table component includes a plurality of look-up tables, and wherein plurality of look-up tables includes a header table, a colour table, a PLL pathological table, an equalizer pathological table, and a line index table;

filtering an output of at least one of the state machine and the plurality of look-up tables; and

dithering an output of at least one of the state machine and the plurality of look-up tables, wherein

performing the pre-programming includes:

generating the computer-readable algorithm, wherein generating the computer-readable algorithm includes: configuring the state machine, and further includes configuring a memory component to include the plurality of look-up tables to regenerate the data pattern; and

storing at least one other portion of the plurality of portions in the plurality of look-up tables;

storing the at least one other portion of each of the plurality of portions is accomplished such that the other portion of each of the plurality of portions is a forty-bit data sample including a unique 10-bit data word;

configuring the memory component includes:

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, including configuring the at least one look-up table to store a part of a repeating data sequence, configuring the at least one look-up table to store a value indicating a number of times that the part of the repeating data sequence is to be repeated;

configuring logic for the equalizer pathological table for selecting between two elements based on a line number and further based on which of the at least one data pattern is selected;

configuring the memory component is accomplished such that:

the header table includes a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

the line index table includes values indicating when to switch to and from the vertical blanking lines to active video lines;

the equalizer pathological table is configured for algorithmic pattern generation of active video lines;

each look-up table of the plurality of look-up tables is divided into five sample segments; and

such that each of the five sample segments includes four 10-bit samples, and further includes a repeat value that indicates how many times the four 10-bit samples are to be repeated; and ~~The method of Claim 107,~~ wherein

the method is accomplished by employing the test circuit of Claim 94.

110. (Currently amended) A method, comprising:

performing pre-programming to provide a set of at least one pre-programmed data pattern;

selecting a data pattern to be created from the set of at least one pre-programmed data pattern, wherein each pre-programmed data pattern in the set of at least one pre-programmed data pattern is pre-programmed for subsequent creation of the pre-programmed data pattern, and wherein each pre-programmed data pattern of the set of at least one pre-programmed data pattern includes a plurality of portions;

creating the selected data pattern by employing at least one of software and hardware, wherein creating the selected data pattern includes:

for each of the plurality of portions of the selected data pattern that is pre-programmed for algorithmic pattern generation, performing a pre-programmed algorithm to create the portion; and

for each of the plurality of portions of the selected data pattern that is stored based on the pre-programming of the selected data pattern, retrieving the portion;

determining and storing at least one checksum for each data pattern in the set of at least one pre-programmed data pattern, wherein each data pattern in the set of at least one data pattern is a component video pattern, the set of at least one data pattern includes a plurality of component video patterns including at least sixteen data patterns, and wherein creating the selected test pattern includes regenerating the selected test pattern;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit;

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin;

determining if a different data pattern is selected; and

if a different data pattern is selected:

asserting a pattern change signal; and

resetting a state machine responsive to the pattern change signal;

decoding an output of a pattern select value of a pattern select signal to identify the selected data pattern and providing a plurality of signals based on the pattern select signal to the state machine; and

wherein the pre-programmed algorithm is a computer-readable algorithm, and wherein creating the selected data pattern includes, based upon the set of at least one pre-programmed algorithm:

when the data pattern is selected, starting the state machine and initiating sample, packet, and look-up signals; and

creating the selected data pattern from at least a look-up table component and a state machine by performing actions, including:

tracking a location in a data sequence of the selected test pattern and transitioning between states according to the pre-programming by providing a plurality of clear and increment signals from the state machine;

employing the look-up table component to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, wherein the look-up table component includes a plurality of look-up tables, and wherein plurality of look-up tables includes a header table, a colour table, a PLL pathological table, an equalizer pathological table, and a line index table;

filtering an output of at least one of the state machine and the plurality of look-up tables; and

dithering an output of at least one of the state machine and the plurality of look-up tables, wherein

performing the pre-programming includes:

generating the computer-readable algorithm, wherein generating the computer-readable algorithm includes: configuring the state machine, and further includes configuring a memory component to include the plurality of look-up tables to regenerate the data pattern; and

storing at least one other portion of the plurality of portions in the plurality of look-up tables;

storing the at least one other portion of each of the plurality of portions is accomplished such that the other portion of each of the plurality of portions is a forty-bit data sample including a unique 10-bit data word;

configuring the memory component includes:

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals, including configuring the at least one look-up table to store a part of a repeating data sequence, configuring the at least one look-up table to store a value indicating a number of times that the part of the repeating data sequence is to be repeated;

configuring logic for the equalizer pathological table for selecting between two elements based on a line number and further based on which of the at least one data pattern is selected;

configuring the memory component is accomplished such that:

the header table includes a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

the line index table includes values indicating when to switch to and from the vertical blanking lines to active video lines;

the equalizer pathological table is configured for algorithmic pattern generation of active video lines;

each look-up table of the plurality of look-up tables is divided into five sample segments; and

such that each of the five sample segments includes four 10-bit samples, and further includes a repeat value that indicates how many times the four 10-bit samples are to be repeated; and ~~The method of Claim 107,~~ wherein

the method is accomplished by employing the test circuit of Claim 96, and wherein the pattern selection value is the pattern select value.

111. (Withdrawn) The method of Claim 75, wherein:

each of the plurality of data patterns is a component video pattern;

storing the at least one other portion of the plurality of portions in a look-up table includes storing a unique data word in the look-up table, and wherein storing the at least one other portion of the other data pattern in the look-up table includes storing another unique data word in the look-up table;

generating the plurality of computer-readable algorithms includes:

configuring a state machine with, for each of the plurality of data patterns, a sequencing for regenerating each of the component video data patterns;

configuring a header table to store a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

configuring a line index table to store values indicating a number of lines to transmit before switching to and from the vertical blanking lines to active video lines;

configuring a colour table, a PLL pathological table, and an equalizer pathological table for algorithmic pattern generation of portions of each of the plurality of component video data patterns for the active video lines;

creating the selected data pattern includes:

providing a plurality of clear and increment signals based on the sequencing for regenerating the selected component video pattern; and

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals; and

wherein the method further comprises:

determining and storing at least one checksum for each of the plurality of data patterns;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit;

and

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin.

112. (Withdrawn) The test circuit of Claim 83, further comprising:

an output register that is configured to provide a regenerated selected data pattern based, in part, on the sequencing; and

a built-in self test circuit that is configured to perform actions, including:

during a configuration, determining and storing at least one checksum for each of the plurality of data patterns;

determining at least one checksum for the regenerated selected data pattern; and

comparing the at least one checksum for the regenerated selected data pattern with the at least one stored checksum for the selected data pattern.

113. (Withdrawn) The test circuit of Claim 92, further comprising:

a built-in self test circuit that is arranged to perform actions, including:

during a configuration, determining and storing at least one checksum for each of the plurality of component video data patterns;

determining at least one checksum for the regenerated selected data pattern; and

comparing the at least one checksum for the regenerated selected data pattern with the at least one stored checksum for the selected data pattern; and

a BIST result output pin that is configured to provide a BIST result signal that indicates a result of the comparison, wherein the look-up table component is a memory component, and wherein the header table stores:

a plurality of forty-bit data samples that each include a unique data word; and

a sequence of data that includes a portion of a repeating vertical blanking data sequence for the vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence.

114. (Withdrawn) The test circuit of Claim 94, further comprising:

a pattern selection register that is arranged to store and provide a pattern select value indicating the selected data pattern, wherein each of the plurality of data patterns is pre-programmed, and wherein the state machine is further configured to control a retrieval of the portion of the selected data pattern from the look-up table component.

115. (Withdrawn) The test circuit of Claim 94, further comprising:

a pattern selection register that is arranged to store and provide a pattern select value indicating the selected data pattern, wherein each of the plurality of data patterns is a component video data pattern;

a BIST result output pin that is configured to provide a BIST result signal that indicates a result of the comparison,

wherein the state machine is configurable to provide the sequencing for the algorithmic pattern generation of the other portion of the selected data pattern by performing actions, including providing a plurality of clear and increment signals;

the look-up table component is configurable to store a portion of each of a plurality of data patterns based on the plurality of clear and increment signals and the pattern selection value, wherein the look-up table component is a memory component that includes:

a line index table that stores values indicating a number of lines to transmit before switching to and from vertical blanking lines to active video lines;

a header table that stores:

a plurality of forty-bit data samples that each include a unique data word; and

a sequence of data that includes a portion of a repeating vertical blanking data sequence for the vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

a colour table;

a PLL pathological table; and

an equalizer pathological table; and

wherein the test circuit further comprises a plurality of logic gates that are arranged to select one of two values associated with reading from the equalizer pathological table based on a line count value and the pattern selection value.

116. (Currently amended) A method for testing a television, comprising:

configuring a state machine with, for each of a plurality of component video data patterns, a sequencing for regenerating each of the component video data patterns;

configuring a header table to store:

a plurality of forty-bit data samples that each include a unique data word; and

a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

configuring a line index table to store values indicating a number of lines to transmit before switching to and from the vertical blanking lines to active video lines;

configuring a colour table, a PLL pathological table, and an equalizer pathological table for algorithmic pattern generation of portions of each of the plurality of component video data patterns for the active video lines;

determining and storing at least one checksum for each of the plurality of component video data patterns;

selecting one of the plurality of component video patterns;

providing a plurality of clear and increment signals based on the sequencing for regenerating the selected component video pattern;

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit; and

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin, wherein the plurality of component video patterns includes at least sixteen component video-patterns; regeneration of the selected data pattern is provided based on a relatively small number of data words including the plurality of forty bit data samples and the sequence of data; configuring the at least one look-up table is accomplished such that each look-up table of the at least one look-up table is divided into five sample segments; each of the five sample segments includes four 10-bit samples, and further includes a repeat value that indicates how many times the four 10-bit samples are to be repeated; and ~~The method of Claim 98,~~ wherein

the method is accomplished by employing the test circuit of Claim 92, and wherein the set of at least one pre-programmed data pattern includes the plurality of component video patterns.

117. (Currently amended) A method for testing a television, comprising:

configuring a state machine with, for each of a plurality of component video data patterns, a sequencing for regenerating each of the component video data patterns;

configuring a header table to store:

a plurality of forty-bit data samples that each include a unique data word; and

a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

configuring a line index table to store values indicating a number of lines to transmit before switching to and from the vertical blanking lines to active video lines;

configuring a colour table, a PLL pathological table, and an equalizer pathological table for algorithmic pattern generation of portions of each of the plurality of component video data patterns for the active video lines;

determining and storing at least one checksum for each of the plurality of component video data patterns;

selecting one of the plurality of component video patterns;

providing a plurality of clear and increment signals based on the sequencing for regenerating the selected component video pattern;

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit; and

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin, wherein the plurality of component video patterns includes at least sixteen component video-patterns; regeneration of the selected data pattern is provided based on a relatively small number of data words including the plurality of forty bit data samples and the sequence of data; configuring the at least one look-up table is accomplished such that each look-up table of the at least one look-up table is divided into five sample segments; each of the five sample segments includes four 10-bit samples, and further includes a repeat value that indicates how many times the four 10-bit samples are to be repeated; and ~~The method of Claim 98,~~ wherein

the method is accomplished by employing the test circuit of Claim 94, and wherein the plurality of data patterns includes the plurality of component video data patterns.

118. (Currently amended) A method for testing a television, comprising:

configuring a state machine with, for each of a plurality of component video data patterns, a sequencing for regenerating each of the component video data patterns;

configuring a header table to store:

a plurality of forty-bit data samples that each include a unique data word; and

a sequence of data that includes a portion of a repeating vertical blanking data sequence for vertical blanking lines, and further includes a repeat field that indicates a number of repetitions for the repeating vertical blanking sequence;

configuring a line index table to store values indicating a number of lines to transmit before switching to and from the vertical blanking lines to active video lines;

configuring a colour table, a PLL pathological table, and an equalizer pathological table for algorithmic pattern generation of portions of each of the plurality of component video data patterns for the active video lines;

determining and storing at least one checksum for each of the plurality of component video data patterns;

selecting one of the plurality of component video patterns;

providing a plurality of clear and increment signals based on the sequencing for regenerating the selected component video pattern;

employing the header table, the colour table, the PLL pathological table, the equalizer pathological table, and the line index table to regenerate the selected data pattern based, in part, on the plurality of clear and increment signals;

concurrently:

displaying a video picture based on the regenerated selected test pattern; and

providing the regenerated selected test pattern to a built-in self test circuit; and

employing the built-in self test circuit to:

generate at least one BIST checksum from the regenerated selected data pattern;

compare the at least one BIST checksum with the at least one stored checksum for the selected data pattern; and

provide a result of the comparison to a BIST result output pin, wherein the plurality of component video patterns includes at least sixteen component video-patterns; regeneration of the selected data pattern is provided based on a relatively small number of data words including the plurality of forty bit data samples and the sequence of data; configuring the at least one look-up table is accomplished such that each look-up table of the at least one look-up table is divided into five sample segments; each of the five sample segments includes four 10-bit samples, and further

includes a repeat value that indicates how many times the four 10-bit samples are to be repeated; and ~~The method of Claim 98,~~ wherein

the method is accomplished by employing the test circuit of Claim 96, and wherein the state machine is the pattern generation state machine.

119. (New) The method of Claim 50, wherein each data pattern of the set of at least one pre-programmed data pattern is a complete video test pattern.

120. (New) The method of Claim 50, wherein each of the plurality of portions that are stored based on the pre-programming is a forty-bit data sample including a unique 10-bit data word.